CLAIMS

What is claimed is:

1. A tissue accessing and anchoring device, comprising:

a. an elongated shaft having a distal end and a proximal end;

b. a tissue cutting member at the distal end of the shaft; and

c. at least one anchoring element extending from a position at or near the distal end of the shaft.

2. The accessing and anchoring device of claim 1 wherein the extended anchoring element forms a curved structure as it extends.

3. The accessing and anchoring device of claim 2 wherein the curved structure comprises a helical coil.

4. The accessing and anchoring device of claim 2 wherein the curved structure of the anchoring element extends through at least 180°.

5. The accessing and anchoring device of claim 2 wherein the curved structure of the anchoring element extends through at least 360°.

6. The accessing and anchoring device of claim 2 wherein the curved structure of the anchoring element extends through at least 540°.

7. The accessing and anchoring device of claim 1 wherein the anchoring element extends radially.

8. The accessing and anchoring device of claim 7 wherein the anchoring element comprises a helical coil.

9. The accessing and anchoring device of claim 1 wherein the anchoring element extends longitudinally.

10. The accessing and anchoring device of claim 9 wherein the anchoring element comprises a helical coil.

11. The accessing and anchoring device of claim 1 wherein the elongated shaft has an inner lumen extending to a location at or near the distal end of the shaft.

12. The accessing device of claim 11 wherein the radiation detector is provided on a distal extremity of an elongated member slidably disposed within the inner lumen of the elongated shaft.

13. The accessing and anchoring device of claim 1 wherein the tissue cutting member is an electrode.

14. The accessing and anchoring device of claim 13 wherein the electrode has an electrically active surface.

15. The accessing and anchoring device of claim 14 wherein the electrically active surface has a sharp edge.

16. The accessing and anchoring device of claim 13 wherein the tissue cutting electrode is configured to be electrically connected to an RF energy source.

17. The accessing and anchoring device of claim 13 wherein the electrosurgical cutting edge of the cutting member is spaced from the distal end of the shaft.

18. The accessing and anchoring device of claim 13 wherein the electrosurgical cutting edge has an arcuate shape.

19. The accessing and anchoring device of claim 1, having at least two radially extending anchoring elements.

20. The accessing and anchoring device of claim 1, having at least three radially extending anchoring elements.

21. The accessing and anchoring device of claim 19 wherein the radially extending anchoring elements extend along a substantial length of the shaft.

22. The accessing and anchoring device of claim 21 wherein the substantial length of the elongate shaft through which the anchoring elements extend has an oblong transverse cross section.

23. A tissue accessing and anchoring device, comprising:

a. an elongated shaft having a distal end, a proximal end and at least a distal portion having an oblong transverse cross section along the length thereof;

b. a tissue cutting member at the distal end of the shaft;

c. a plurality of elongated anchoring elements which extend along the portion of the elongated shaft having an oblong transverse cross section.

24. The tissue accessing and anchoring device of claim 23 wherein the plurality of elongated anchoring elements extending along said length of the shaft having an oblong transverse cross section are parallel and extend along a long dimension of the oblong transverse cross section.

25. A method of accessing and anchoring tissue in a patient which corresponds to a lesion site within the patient's body comprising:

a) locating the approximate position of tissue which corresponds to a lesion site within the patient's body by detecting radiation from a radioactive material accumulated within the tissue with a radiation detector; and

b) accessing the tissue with an accessing and anchoring device having an elongated shaft having a distal end, a proximal end, a longitudinal axis, at least one radially extending anchoring element, and a tissue cutting member at the distal end of the shaft by activating the tissue cutting member to ablate tissue while passing the shaft into the patient's body until the distal end of the shaft is disposed adjacent the tissue;

c) extending at least one anchoring element from the shaft and into the tissue; and

d) securing the distal end of the device to the tissue.

26. A method of accessing and anchoring a sentinel lymph node of a patient which corresponds to a lesion site within the patient's body comprising:

a) locating the approximate position of at least one sentinel lymph node within the patient's body by detecting radiation from a radioactive material accumulated within the sentinel lymph node with a radiation detector; and

b) accessing the at least one sentinel lymph node with an accessing and anchoring device having an elongated shaft having a distal end, a proximal end, a longitudinal axis, at least one radially extending anchoring element, and a tissue cutting member at the distal end of the shaft by activating the tissue cutting member to ablate tissue while passing the shaft into the patient's body until the distal end of the shaft is disposed adjacent the at least one sentinel lymph node;

c) extending at least one anchoring element from the shaft and into the sentinel lymph node; and

d) securing the distal end of the device to the at least one sentinel lymph node.

27. The method of claim 26 wherein the distal end of the accessing and anchoring device is secured to the sentinel lymph node by radially extending at least one anchoring element from the distal end of the accessing and anchoring device into the at least one sentinel lymph node.

28. The method of claim 26 wherein an outer extremity of the at least one anchoring element is configured to emit RF energy and further comprising activating the outer extremity of the at least one anchoring element to emit RF energy during deployment thereof.

29. The method of claim 26 wherein the shaft of the accessing and anchoring device has an inner lumen configured to extend to a location at or near the distal end of the shaft, and the device comprises a radiation detector slidably disposed within the inner lumen, wherein the step of detecting radiation comprises detecting radiation from a radioactive material accumulated within the sentinel lymph node with a radiation detector that is slidably disposed within the inner lumen of the elongated shaft.

30. The method of claim 27 wherein the position of the distal end of the shaft adjacent to the at least one sentinel lymph node is confirmed by detecting an amount of radiation energy emanating from the tissue along the longitudinal axis of the shaft and manipulating the shaft and or the radiation energy detector to detect the amount of radiation energy emanating from the tissue adjacent the longitudinal axis of the shaft and comparing the amounts of radiation detected from various portions of tissue.

31. The method of claim 26 wherein a gamma camera is used to determine the approximate position of the at least one sentinel lymph node within the patient's body prior to accessing the sentinel lymph node with the device.

32. The method of claim 26 wherein the shaft and sentinel lymph node are imaged with an ultrasound imaging system during insertion of the shaft into the patient's body.

33. The method of claim 26 further comprising surgically removing the at least one sentinel lymph node with the accessing and anchoring device attached thereto and using the accessing and anchoring device to locate the at least one sentinel lymph node during the surgical procedure.

34. The method of claim 26 further comprising marking the skin of the patient with a visible mark above the location of the sentinel lymph node prior to accessing the sentinel lymph node with the cannula.

35. The method of claim 26 wherein the tissue cutting member is an RF powered electrode.

36. The method of claim 35 wherein the RF powered electrode comprises an arcuate shaped wire spaced distally from a distal extremity of the distal end of the cannula whereby tissue is ablated along the length of the RF electrode and displaced by the distal end of the cannula as it is advanced through the tissue.

37. A node accessing and anchoring system, comprising:

a. a node accessing and anchoring device comprising:

an elongated shaft having a distal end and a proximal end;

a tissue cutting member at the distal end of the shaft; and

at least one anchoring element extending from a position at or near the distal end of the shaft; and

b. a radiation detector at least a portion of which is disposed at or near the distal end of the shaft.

38. The system of claim 37, wherein the elongated shaft further has a longitudinal axis defining a radial direction forming an angle with respect to a plane including said longitudinal axis, and wherein said at least one anchoring element extends in a radial direction from a position at or near to the distal end of the shaft.

39. The system of claim 37, wherein the at least one anchoring element forms a curved structure as it extends.

40. The system of claim 39 wherein the curved structure comprises a helical coil.

41. The system of claim 39 wherein the curved structure of the anchoring element extends through at least 180°.

42. The system of claim 39 wherein the curved structure of the anchoring element extends through at least 360°.

43. The system of claim 39 wherein the curved structure of the anchoring element extends through at least 540°.

44. A system for accessing and anchoring a sentinel node within a patient, comprising:

a. a node accessing and anchoring device comprising:

an elongated shaft having a longitudinal axis, a distal end and a proximal end;

a tissue cutting member at the distal end of the shaft;

at least one radially extending anchoring element at or near the distal end of the shaft, the at least one radially extending anchoring element having a retracted configuration and a deployed configuration extending from the distal end of the shaft, and

a deployment actuator disposed proximal of the distal end of the elongate shaft and configured to deploy the radially extending anchoring element from a retracted configuration to an extended configuration; and

b. a radiation detector disposed at or near the distal end of the shaft.

45. The system of claim 44 wherein the anchoring element further comprises a first electrical lead electrically coupled to the at least one radially extending wire and a second electrical lead electrically coupled to the patient whereby RF energy can be applied to the at least one anchoring element during deployment and extension thereof.

46. The system of claim 44 wherein the tissue cutting member at the distal end of the shaft comprises an RF electrode configured to ablate and penetrate tissue.

47. The system of claim 46 wherein the RF electrode on the distal end of the shaft comprises an arcuate wire spaced distally from the distal extremity of the distal end of the elongate shaft.

48. The system of claim 47 wherein the RF electrode lies in substantially the same plane as the longitudinal axis of the elongate shaft of the node accessing and anchoring device.

49. The system of claim 44 wherein the deployment actuator of the node accessing and anchoring device is configured to both extend the anchoring elements and activate RF energy to the anchoring elements.

50. The system of claim 44 wherein the node accessing and anchoring device further comprises a housing, an inner conductor, a main shaft disposed within an inner lumen of the inner conductor, an actuator coupled to the inner conductor for extending the anchoring elements and an RF energy source switchably coupled to the inner conductor.

51. The system of claim 44, wherein the anchoring element forms a curved structure as it extends radially.

52. The system of claim 44 wherein the curved structure of the anchoring element extends through at least 180°.

53. The system of claim 44 wherein the curved structure of the anchoring element extends through at least 360°.

54. The system of claim 44 wherein the curved structure of the anchoring element extends through at least 540°.

55. A node accessing and anchoring device comprising:

an elongated shaft having a longitudinal axis, a distal end and a proximal end;

a tissue cutting member at the distal end of the shaft;

at least one radially extending anchoring element at or near the distal end of the shaft, the at least one radially extending anchoring element having a retracted configuration and a deployed configuration extending from the distal end of the shaft, and

a deployment actuator disposed proximal of the distal end of the elongate shaft and configured to deploy the radially extending anchoring element from a retracted configuration to an extended configuration.

56. The node accessing and anchoring device of claim 55, wherein the anchoring element forms a curved structure as it extends radially.

57. The node accessing and anchoring device of claim 56 wherein the curved structure of the anchoring element extends through at least 180°.

58. The node accessing and anchoring device of claim 56 wherein the curved structure of the anchoring element extends through at least 360°.

59. The node accessing and anchoring device of claim 56 wherein the curved structure of the anchoring element extends through at least 540°.

60. The tissue accessing and anchoring device of claim 1, further comprising a radiation detector releasably connected with said elongated shaft.

61. The tissue accessing and anchoring device of claim 23, further comprising a radiation detector releasably connected with said elongated shaft.

62. The method of claim 29, further comprising the step of removing said radiation detector from within said inner lumen of said shaft.

63. The system of claim 37, wherein said radiation detector and said elongated shaft are configured to form a releasable connection between said radiation detector with said elongated shaft.

64. The system of claim 44, wherein said radiation detector and said elongated shaft are configured to form a releasable connection between said radiation detector with said elongated shaft.

65. The node accessing and anchoring device of claim 55, further comprising a radiation detector releasably connected with said elongated shaft.